

3- MAXIMUM WARTIME PRODUCTION CAPACITY  
OF KANSAS AGRICULTURE.

Irrigation Supplement<sup>1</sup>

INTRODUCTION

Estimates of the production capacities for irrigated land in Kansas have been made for the years 1944 and 1945. The assumptions given in "A Guide for an Appraisal of Wartime Production Capacity" issued on April 5, 1943 by the U. S. Department of Agriculture were followed in making the estimates. The economic inter-relationship of dryland to irrigated land was considered in preparing the estimates.

AGRICULTURE AND WARTIME NEEDS IN  
THE IRRIGATED SECTIONS OF KANSAS

It is recommended that greater emphasis be placed on the production of alfalfa, alfalfa seed, corn, Irish potatoes, sweet potatoes and yams, fresh vegetables and sweet sorghums in the irrigated areas of Kansas (See Table 1). Less emphasis should be given to the production of oats, barley, and sugar beets.

These changes would make possible a slight increase in the production of milk, hogs and poultry. The production of potatoes and other foods for direct human consumption was increased in defense areas.

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<sup>1</sup>Data included in the Irrigation Supplement and recommendations for obtaining maximum production were compiled by the Water Utilization Planning Service, B.A.E. which gratefully acknowledges assistance from representatives of:

Division of Water Resources - Kansas State Board of Agriculture, Topeka, Kansas  
Bureau of Agricultural Economics, Topeka, Kansas  
Extension Division, K.S.C., Department of Agricultural Engineering.  
Bureau of Reclamation, U.S. Dept. of Interior, Topeka, Kansas.  
Extension Service, K.S.C.

MAXIMUM FERTILE PRODUCTION CAPACITY  
OF KANSAS AGRICULTURE

Introduction

INTRODUCTION

Estimates of the production possibilities for irrigated land in Kansas have been made for the years 1931 and 1941. The assumptions given in "A Guide for an Assessment of Fertile Production Capacity" issued on April 1, 1943 by the U. S. Department of Agriculture were followed in making the estimates. The economic interrelationship of irrigated and irrigated land was considered in preparing the estimates.

AGRICULTURE AND MAXIMUM FERTILE PRODUCTION  
THE IRRIGATED SECTION OF KANSAS

It is recommended that greater emphasis be placed on the production of alfalfa, alfalfa seed, corn, Irish potatoes, sweet potatoes and grain. Legumes and sweet sorghum in the irrigated areas of Kansas (see Table I). Farm outputs should be given to the production of corn, barley, and sugar.

These changes would also provide a slight increase in the production of milk, eggs and poultry. The production of potatoes and other foods for direct human consumption was increased in Kansas areas.

Data included in the Irrigation Experiment and recommendations for irrigating maximum production were compiled by the Water Utilization Research Service, U.S.D.A. which gratefully acknowledges assistance from representatives of the Division of Water Resources -- Kansas State Board of Agriculture, Topeka, Kansas; Bureau of Agricultural Economics, Topeka, Kansas; Extension Division, U.S.D.A., Department of Agricultural Economics; Bureau of Reclamation, U.S. Dept. of Interior, Topeka, Kansas; Extension Service, U.S.D.A.



Table 1. Recommended trends of crop production on irrigated land in Kansas in 1944 and 1945 and comparison with 1942.

Crop	Acreage	1942	Ratio	
			1944-1942	1945-1942
			acres	acres
Corn, all	Planted	2,169	128	166
Grain sorghums, all	"	20,890	107	108
Sweet sorghums, all except sirup	"	18,000	112	117
Soy beans, grown alone <sup>1</sup>	"	None		
Sugar beets	"	10,795	65	65
Irish potatoes	"	880	124	236
Fresh vegetables	Harvested	1,220	110	129
Sweet potatoes and yams	Planted	160	169	300
Beans, dry edible <sup>2</sup>	"	None		
Oats	"	600	80	70
Barley	"	4,905	82	70
Wheat	"	23,615	111	111
Rye	"	50	80	40
Hay, all tame except soybean, small grain and cowpea	Harvested	21,485	109	127
Rotation cropland pasture		2,260	106	117
Miscellaneous (not classified this table)		6,370		
TOTAL		113,790		

<sup>1</sup>Soy beans not recommended on irrigated land because of rabbit damage to vines, especially in western irrigated sections.

<sup>2</sup>No recommendations made on dry edible beans. There are 1,000 acres of irrigated cropland in area 11 that might be shifted to bean production.

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## CROPLAND AND PRINCIPAL CROPS

Maximum Acreage of Irrigated Cropland

The estimated maximum acreage of irrigated land to be used for all purposes in Kansas is 119,000 in 1944 and 125,000 in 1945 as compared with 112,950 acres in 1942. These are feasible and probable estimates.

The increase in land irrigated will be obtained by an extension of pump irrigation using ground water from wells, flood and perennial waters from streams and by the diversion of surface waters through gravity systems. It is anticipated that a large part of the increase will come through new pumping units using ground water. The conversion from dryland to irrigated land will not require the establishment of new farm units nor the clearing or drainage of additional land.

It is possible that the 125,000 acres estimated for 1945 may be exceeded. The records show that if all irrigators who applied water to land in 1939, 1940 and 1941 were to irrigate during a single year, they would water a total of 125,500 acres. This acreage would all be cropland. A state-wide drought might conceivably furnish sufficient incentive to cause all of this 125,500 acres to be irrigated. There are roughly 100,000 acres under existing ditches in the Arkansas River Valley that would be irrigated if water supplies in the river were larger and more stable. Limited and erratic water supplies have prevented irrigation on 35,000 acres of this land during the past 15 to 20 years. Working agreements recently effected between Kansas and Colorado for the distribution of additional water to irrigators in the Arkansas Valley will provide about 30,000 acre-feet of "new" water annually to the 100,000 acres. Some of the 30,000 acre-feet probably will be used on land that has not been watered for years. Availability of this "new" surface water plus an accelerated well pumping program could, if drouth conditions were prevalent, push the total area under irrigation in Kansas above 134,000 acres by 1945.

Principal Crops

The principal crops or groups of crops irrigated in Kansas and the percent that each is of the total is as follows: Corn and sorghums, 37 percent; hay pasture and seed crops 29 percent; small grains 24 percent; and sugar beets, vegetables, orchards and all other special crops 10 percent.

Since 1939 there has been an increase in the acreages planted to corn and alfalfa. Considerable acreage of those crops was lost during the decade prior to 1939 when hot winds, grass-hoppers and a shortage of surface water curtailed production. Increasing livestock numbers in the irrigated areas have prompted the increased production of sweet sorghums and temporary pasture.

Scott County in type-of-farming area 12 has shifted irrigated land from the production of potatoes and sugar beets and alfalfa to wheat. Approximately 55 percent of the 18,000 acres irrigated in Scott County in 1942-43 was in wheat. The irrigators rented or used the wheat as fall and early spring pasture and then harvested a good grain crop from the land. So long as cattle numbers are higher than the pasture "in sight" and protein feeds are scarce this practice will continue.



CROPLAND AND PRINCIPAL CROPS

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The increase in land irrigated will be obtained by an extension of pump irrigation using ground water from wells, lined and perennial water from streams and by the diversion of surface waters through gravity systems. It is anticipated that a large part of the increase will come through new pumping units using ground water. The conversion from dryland to irrigated land will not require the establishment of new farm units nor the clearing or drainage of additional land.

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Principal Crops

The principal crops or groups of crops irrigated in Kansas and the percent that each is of the total is as follows: Corn and sorghums, 37 percent; hay, pasture and feed crops, 25 percent; small grains, 24 percent; and sugar beets, vegetables, orchards and all other special crops, 10 percent.

Since 1939 there has been an increase in the acreage planted to corn and alfalfa. Considerable acreage of these crops was lost during the decade prior to 1939 when hot winds, grasshopper and a shortage of surface water curtailed production. Increasing livestock numbers in the irrigated areas have prompted the increased production of sweet sorghums and forage crops.

Scott County is typical of the 22 counties which irrigated land from the production of potatoes and sugar beets and alfalfa as wheat. Approximately 25 percent of the 16,000 acres irrigated in Scott County in 1941-42 was in wheat. The irrigators tended to use the wheat as fall and early spring pasture and then harvested a good grain crop from the land. So long as cattle numbers are higher than the pasture "in alfalfa" and potatoes looks are scarce this practice will continue.

### Some Suggestions for Increasing Production

Complete data for the state comparing irrigated and dryland cropland acre yields are not available. Such data as are presently available are presented in table 2.

It is suggested that crop yields might be considerably improved if all irrigators not now using the practices outlined would adopt such of them as are adapted to individual cases:

1. Selection of proper and improved varieties of seeds and crops.
2. Strict observance of recommended rates and dates of seeding and of other good farming practices generally accepted by competent sources.
3. Efficient application of available water supplies.
4. Selection of cropping systems that will eliminate labor demand peaks and extend labor requirements to cover a greater portion of the calendar year.

Additional assistance could be given to crop production if all agencies and organizations and programs for agriculture could:

1. Increase educational, demonstrational and technical services now offered to irrigators, and
2. Expand, correlate and place before the public all available and pertinent data on the full development of the water resources now available to agriculture.

### PRODUCTION CAPACITY IN 1944

Since the wartime maximum is based on the expected and feasible increase in irrigation activities there will be no basic differences between 1944 and 1945 production capacities other than an increase of 6,000 acres of land watered. The problems and procedures of 1944 production have all been covered in the foregoing review of the 1945 production study. Table 3 reviews the estimated 1944 capacity, the maximum capacity and compares the recommended production with 1942 and 1943.

### WARTIME CAPACITY BY ADJUSTMENT

#### Type-of-farming Areas

#### Areas 1, 2, 3, 4, 5, 6a, 6b

No variation from present cropping practice is expected or recommended unless the demand for oil crops is found to be greater than now anticipated. There are 2,000 acres under irrigation in these areas that could be planted to soy beans without seriously upsetting cropping schedules for livestock feed production. About 1,000 acres of the land under irrigation are in area 3 and will furnish alfalfa and other grasses to a dehydrating plant near Lawrence, Kansas.

#### Areas 7 and 8

Corn production in area 8 and the northern part of area 7 should be increased.



Recommendations for Irrigation Production

Complete data for the state comparing irrigated and dryland crops are  
virtually not available. Such data as are presently available are presented  
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It is suggested that crop yields might be considerably improved if all  
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PRODUCTION CAPACITY IN 1944

Since the written maximum is based on the expected and feasible increases  
in irrigation activities there will be no basic differences between 1944 and  
1945 production capacities other than an increase of 1,000 acres of land watered.  
The problem and procedures of 1944 production have all been covered in the  
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1944 capacity, the maximum capacity and compares the recommended production  
with 1942 and 1943.

WASTING CAPACITY BY ADJUSTMENT

Type-of-Farming Areas

Area 1, 2, 3, 4, 5, 6, 7, 8, 9

No variation from present cropping practices is expected or recommended  
unless the demand for all crops is found to be greater than now anticipated.  
There are 2,000 acres under irrigation in these areas that could be planted  
to soy beans without necessarily upsetting cropping schedules for livestock feed  
production. About 1,000 acres of the land under irrigation are in area 3 and  
will furnish alfalfa and other grasses to a dairymaking plant near Lawrence,  
Kansas.

Area 10, 11, 12

Corn production in area 8 and the northern part of area 7 should be increased.



Table 2. Estimated wartime use of irrigated cropland, 1944 capacity and maximum capacity with comparisons.

State of Kansas

Crop	Acreage	1942	1943	Wartime capacity		Percentage	
				Maximum	1944	1944 of maximum	1944 of 1942
		acres	acres	acres	acres	percent	percent
Corn, all	Planted	2,160	2,400	3,590	2,770	77	128
Grain sorghums	"	20,890	21,890	22,480	22,330	99	107
Sweet sorghums	"	18,000	18,900	21,000	20,145	96	112
Sugar beets	"	10,795	7,000	7,000	7,000	100	65
Irish potatoes	"	880	1,000	2,080	1,095	53	124
Sweet potatoes and yams	"	160	220	480	270	56	169
Fresh vegetables	Harvested	1,220	1,300	1,570	1,340	85	110
Small fruits	"	60	60	60	75	125	125
Orchards, vineyards and nuts	"	260	260	280	260	93	100
Oats	Planted	600	645	420	480	114	80
Barley	"	4,905	5,065	3,430	4,020	117	82
Winter wheat	"	23,615	23,615	26,260	25,775	98	109
Rye	Harvested	50	50	20	40	200	80
Hay, all tame except soybean, small grain and cowpea	"	21,485	23,535	26,850	23,430	89	109
Seeds, hay and cover crop	"	5,210	5,310	5,190	5,480	106	105
Rotation cropland pasture		2,660	2,710	3,110	2,810	90	106
Wild hay	Harvested	50	50	50	50	100	100
Native pasture		790	790	800	790	99	100
Total land irrigated		113,790	114,800	125,000	119,000	95	105

Table 2. Estimated winter use of irrigated cropland, 1944 specific and maximum capacity with comparisons.

State of Kansas

Crop	Acres	1943	Irrigation capacity		Land of 1944 or 1945
			Maximum 1944	Notes	
Corn, all	Planted	2,160	2,400	2,290	128
Grain sorghum	"	20,890	21,890	22,480	107
Sweet sorghum	"	18,000	18,900	21,000	112
Sugar beets	"	12,792	7,000	7,000	62
Irish potatoes	"	880	1,000	2,080	124
Sweet potatoes and yams	"	160	230	480	129
Fresh vegetables	Harvested	1,220	1,300	1,270	110
Small fruits	"	60	60	60	122
Orchards, vineyards and nuts	"	60	280	280	100
Cats	Planted	800	642	420	80
Barley	"	4,902	5,062	3,430	82
Winter wheat	"	23,612	23,612	22,280	109
Rye	Harvested	20	20	20	80
Rye, all rye except sorghum, small grain and sorghum	"	21,482	22,232	22,850	103
Grass, hay and cover crop	"	2,210	2,310	2,190	102
Rotation cropland pasture	"	2,660	2,710	2,110	106
Wild hay	Harvested	20	20	20	100
Native pasture	"	790	790	790	100
Total land planted		113,790	114,800	122,000	102



#### Area 9

The 400 acres of soybeans under irrigation in Pawnee County in 1943 might be increased if growers are successful in avoiding damage to crops from rabbits destroying the vines.

#### Area 10a

This area containing 40 percent of the irrigated land in Kansas produces 50 to 65 percent of the state sugar beet crop. An indeterminate amount of "new" water from John Martin Reservoir on the Arkansas River in Colorado may be available to this area in 1944 and 1945. Any increase in acres watered (above that shown in the attached estimates) should be used for the production of alfalfa and rotation pasture which is needed to offset a shortage in high protein feeds in the area.

#### Areas 10b and 10c.

A few operators in area 10b have increased potato plantings in 1943. If planting, harvesting, or marketing difficulties develop, these growers should be given prompt assistance. The potatoes should find a readily available market locally.

#### Area 11

Livestock feeds now predominate in this area but if dry edible bean requirements increase above present anticipated levels there are 1,000 acres of irrigated crop land in the area that could be used for the production of dry edible beans.

#### Area 12

This area may also get additional surface water from the John Martin Reservoir. Alfalfa hay acreage should increase when more water is made available.

#### State as a Whole

Production problems on irrigated land are individual in character and stem from many sources. To prevent these difficulties from interfering with maximum crop production it is suggested that every assistance possible be furnished to established irrigators and to prospective irrigators. Such assistance should be given "in the field" and could be rendered by existing agencies and organizations provided that they give emphasis to the solution of individual problems.

In 1939 the Census Bureau reported that 11,386 acres of irrigated cropland in Kansas failed. This should not be allowed to happen in 1944 or 1945 or at any time when food production is so vital as it is today.

The following is a list of the names of the persons who have been named in the various reports of the Commission on the subject of the proposed amendment to the Constitution of the State of New York.

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Table 4. Estimates of wartime use of irrigated cropland, 1944 capacity and maximum capacity, with comparisons  
Area 9, Kansas

Crop	Acreage	1939 <sup>1</sup> acres	1941 <sup>2</sup> acres	1942 <sup>3</sup> acres	1943 <sup>3</sup> acres	Wartime maximum	
						1944 <sup>3</sup> acres	1945 <sup>3</sup> acres
1. Corn, all	Planted	381	415	430	480	500	500
2. Grain sorghums	"	1,759	1,970	2,100	2,130	2,200	2,200
3. Sweet sorghums, except for sirup	"	3,448	3,850	3,995	4,210	4,210	4,300
25. Sugar beets	"	907	1,015	950	600	800	800
26. Irish potatoes	"	79	90	145	150	170	300
27. Sweet potatoes and yams	"	11	15	15	20	30	50
34. Fresh vegetables	Harvested	405	455	470	480	480	485
37. Small fruits	"	8	10	10	10	10	10
38. Orchard, vineyards and nuts	"	12	10	10	10	10	25
43. Total intertilled crops		7,010	7,830	8,125	8,090	8,410	8,670
44. Oats	Planted	69	75	80	80	60	50
45. Barley	"	187	210	220	225	180	150
46. Winter wheat	"	1,035	1,155	1,200	1,200	1,280	1,350
50. Grains cut green for hay	Harvested	20	20	20	20	40	50
51. Rye							
59. Total cropland (44-51 inclusive)		1,311	1,460	1,520	1,525	1,560	1,600
60. Hay, all tame except small grain	Harvested	1,280	1,440	1,495	2,000	2,000	2,100
61. Hay, all tame	"	1,300	1,460	1,515	2,020	2,040	2,150
62. Seeds, hay and cover crop	"	250	280	290	310	350	350
63. Alfalfa seed	"	250	280	290	310	350	350
74. Other hay and cover crop seed	"						
75. Rotation (cropland pasture)		189	210	220	220	225	230
76. Total cropland used for sod crops		1,719	1,930	2,005	2,530	2,575	2,680
77. Total cropland used for crops		8,321	9,290	9,645	9,615	9,970	10,270
80. Total Cropland		10,040	11,220	11,650	12,145	12,545	12,950
82. Wild hay	Harvested	47	50	55	55	55	50
83. Other land in farms (native pasture)		10,087	11,270	11,705	12,200	12,600	13,000
84. Total land in farms (irrigated area)							

<sup>1</sup>Census of Irrigation, Kansas. <sup>2</sup>State Statistician, B.A.E. (Assessor's reports). <sup>3</sup>Estimated by projection of normal rate of increase for irrigation 1919-1939.





Table 4. Estimates of wartime use of irrigated cropland, 1944 capacity and maximum capacity, with comparisons  
(continued)  
Area 10a, Kansas

Crop	Acreage	1939 <sup>1</sup>	1941 <sup>2</sup>	1942 <sup>3</sup>	1943 <sup>3</sup>	Wartime maximum	
		acres	acres	acres	acres	1944 <sup>3</sup>	1945 <sup>3</sup>
1. Corn, all		227	270	280	300	500	500
2. Grain sorghums		8,558	10,100	10,875	11,500	11,600	11,400
3. Sweet sorghums, except for sirup		5,429	6,410	7,050	7,300	8,240	8,400
25. Sugar beets		6,831	8,065	7,515	5,100	4,800	4,800
26. Irish potatoes		13	15	65	80	100	150
27. Sweet potatoes and yams		59	70	75	100	120	120
34. Fresh vegetables		113	130	135	150	170	170
37. Small fruits		1					
38. Orchard, vineyards and nuts		12	15	15	15	15	10
43. Total intertilled crops		21,243	25,075	26,010	24,545	25,545	25,550
44. Oats		339	400	415	460	340	290
45. Barley		1,571	1,850	1,920	1,960	1,570	1,540
46. Winter wheat		6,986	8,250	8,555	9,000	9,865	10,120
50. Grains cut green for hay		95	110	115	115	120	
51. Rye							
59. Total cropland (44-51 inclusive)		8,991	10,610	11,005	11,535	11,895	11,950
60. Hay, all tame except small grain		7,271	8,580	8,900	9,650	10,120	10,000
61. Hay, all tame		7,366	8,690	9,015	9,765	9,880	10,000
62. Seeds, hay and cover crop		1,598	1,890	1,960	2,000	2,050	2,000
63. Alfalfa seed		1,585	1,875	1,945	1,985	2,035	1,985
74. Other hay and cover crop seed		13	15	15	15	15	15
75. Rotation (cropland pasture)		643	760	790	800	850	900
76. Total cropland used for sod crops		9,512	11,230	11,650	12,450	12,900	12,900
77. Total cropland used for crops		30,234	35,685	37,015	36,080	37,440	37,500
80. Total cropland		39,746	46,915	48,665	48,530	50,340	50,400
82. Wild hay		4					
83. Other land in farms (native pasture)		161	180	185	185	190	200
84. Total land in farms (irrigated area)		39,911	47,095	48,850	48,715	50,530	50,600

<sup>1</sup>Census of Irrigation, Kansas. <sup>2</sup>State Statistician, B.A.E. (Assessor's reports). <sup>3</sup>Estimated by projection of normal rate of increase for irrigation 1919-1939.





Table 4. Estimates of wartime use of irrigated cropland, 1944 capacity and maximum capacity, with comparisons  
(continued)  
Area 10b, Kansas

Crop	Acreage	1939 <sup>1</sup> acres	1941 <sup>2</sup> acres	1942 <sup>3</sup> acres	1943 <sup>3</sup> acres	Wartime maximum	
						1944 <sup>3</sup> acres	1945 <sup>3</sup> acres
1. Corn, all	Planted	111	75	80	80	85	100
2. Grain sorghums	"	747	510	415	450	500	500
3. Sweet sorghums, except for sirup	"	2,770	1,890	1,960	2,070	2,010	2,100
25. Sugar beets	"	434	300	275	100	200	200
26. Irish potatoes	"	40	30	180	280	290	400
27. Sweet potatoes and yams	"	32	20	20	30	35	60
34. Fresh vegetables	Harvested	31	20	20	40	40	75
37. Small fruits	"	1					
38. Orchard, vineyards and nuts	"	7	5	5	5	5	15
43. Total intertilled crops		4,173	2,850	2,955	3,055	3,165	3,450
44. Oats	Planted	43	30	30	30	20	20
45. Barley	"	125	85	90	100	80	80
46. Winter wheat	"	1,388	950	985	800	870	1,150
50. Grains cut green for hay	Harvested	52	35	35	35	45	50
51. Rye		15	10	10	10	10	
59. Total cropland (44-51 inclusive)		1,623	1,110	1,150	975	1,015	1,300
60. Hay, all tame except small grain	Harvested	1,148	780	810	1,010	950	1,160
61. Hay, all tame	"	1,200	815	845	935	995	1,210
62. Seeds, hay and cover crop	"	216	150	155	160	160	590
63. Alfalfa seed	"	209	145	150	155	155	570
74. Other hay and cover crop seed	"	7	5	5	5	5	20
75. Rotation (cropland pasture)		1,107	750	780	800	830	1,000
76. Total cropland used for sod crops		2,471	1,680	1,745	1,860	1,940	2,750
77. Total cropland used for crops		5,796	3,960	4,105	4,030	4,180	4,750
80. Total cropland		8,267	5,640	5,850	5,890	6,120	7,500
82. Wild hay	Harvested	52	50	50	50	50	50
83. Other land in farms (native pasture)		277	310	320	320	320	350
84. Total land in farms (irrigated area)		8,596	6,000	6,220	6,260	6,490	7,900

<sup>1</sup>Census of Irrigation, Kansas. <sup>2</sup>State Statistician, B.A.E. (Assessor's reports). <sup>3</sup>Estimated by projection of normal rate of increase for irrigation 1919-1939.





Table 4. Estimates of wartime use of irrigated cropland, 1944 capacity and maximum capacity, with comparisons  
(continued)  
Area 12, Kansas

Crop	Acreage	1939 <sup>1</sup>		1941 <sup>2</sup>		1942 <sup>3</sup>		1943 <sup>3</sup>		Wartime maximum	
		acres		acres		acres		acres		acres	
1. Corn, all	Planted	255		280		295		340		350	400
2. Grain sorghums	"	6,173		6,760		7,055		7,400		7,600	7,600
3. Sweet sorghums, except for sirup	"	3,461		3,790		3,930		4,290		4,620	5,100
25. Sugar beets	"	2,018		2,210		2,055		1,200		1,200	1,200
26. Irish potatoes	"	163		180		380		355		370	380
27. Sweet potatoes and yams	"							15		20	50
34. Fresh vegetables	Harvested	30		30		30		40		50	100
37. Small fruits	"	5		10		10		10		20	20
38. Orchard, vineyards and nuts	"	3									20
43. Total intertilled crops		12,108		13,260		13,755		13,650		14,230	14,890
44. Oats	Planted	48		50		50		50		40	40
45. Barley	"	2,248		2,460		2,550		2,650		2,080	1,540
46. Winter wheat	"	11,205		12,270		12,725		12,530		13,640	13,600
50. Grains cut green for hay	Harvested	159		180		185		185		190	200
51. Rye		38		40		40		40		30	
59. Total cropland (44-51 inclusive)		13,698		15,000		15,550		15,455		15,980	15,380
60. Hay, all tame except small grain	Harvested	7,862		8,610		8,930		9,765		9,800	11,000
61. Hay, all tame	"	8,021		8,790		9,115		9,765		9,990	11,200
62. Seeds, hay and cover crop	"	2,282		2,500		2,590		2,620		2,700	2,100
63. Alfalfa seed	"	2,277		2,495		2,585		2,615		2,695	2,095
74. Other hay and cover crop seed	"	5		5		5		5		5	5
75. Rotation (cropland pasture)		547		600		620		640		640	400
76. Total cropland used for sod crops		10,691		11,710		12,140		12,840		13,140	13,500
77. Total cropland used for crops		25,806		28,260		29,305		29,105		30,210	30,250
80. Total cropland		36,497		39,970		41,445		41,945		43,350	43,750
82. Wild hay	Harvested	137		150		155		155		150	150
83. Other land in farms (native pasture)		36,634		40,120		41,600		42,100		43,500	43,900
84. Total land in farms (irrigated area)											

<sup>1</sup>Census of Irrigation, Kansas. <sup>2</sup>State Statistician, B.A.F. (Assessor's reports). <sup>3</sup>Estimated by projection of normal rate of increase for irrigation 1919-1939.



of primary tests of importance for the following table (Table 1).

Table 1. Results of the tests of the following table (Table 1).

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